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KINDERGARTEN TEACHING AT HOME

By SISTER CHARLOTTE
AND SISTER ETHEL ISABELLA

COMMUNITY OF THE HOLY FAMILY
HIGHER CERTIFICATE NATIONAL FROEBEL UNION



"Magna ars est artem celare"

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INTRODUCTION

As this little manual is meant to deal only with the methods of the instruction of children, not with their education as a whole, religion and religious doctrine are beyond its scope. Their omission, therefore, must not be taken to imply that to the mind of the writers they are unimportant. On the contrary, they are to them the very foundation of all education and all instruction, the beginning and the end of all that makes the worth of human life.

And they would urge that in giving religious instruction, at least as much pains should be taken to study and apply the best methods as are taken in other subjects. If the story of Cinderella as given in Chapter I is worth bestowing care on, not less but much more care is worth giving to (e.g.) any Old or New Testament story that is to be told.

And it is not the case that dogmatic statements such as those of the "Apostles' Creed" are beyond the understanding of small children. When carefully taught and illustrated, there is nothing children enjoy more. Psychologically, the learning of a phrase by heart is at that age a delight and a triumphant acquisition; and philosophically, the

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mind of child the earliest age to about ten is singularly open to eternal verities and keenly and practically interested in them ; so that these play a literally immense part in " forming the mentality " of a child for all ; life. Thus the Jesuits are reported to say that you give them a child up to the age of seven, they do not care who has him afterwards. Later, when the child begins to be taken up with its own doings, " shades of the prison house begin to close about " it : and its vision may be dimmed.

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KINDERGARTEN TEACHING AT HOME

CHAPTER I

HOW TO GIVE A LESSON

General Remarks.—A true knowledge of our child is what we feel we need as we try to train and teach him.

The simplest way of beginning to attain this knowledge is to recall as accurately and exactly as we can our own past experiences in early childhood—how things seemed to us, what we thought, desired, felt, &c.—then to observe and study our child and enter by sympathy into his experiences.

When lessons begin, we need further some knowledge of the development of the laws of growth of the mind. This study of the mind is a department of psychology. It deals with the laws of growth of the mind, from the state of unconscious babyhood to the trained intellect of the man who can think, reason, judge, and create. We should again examine ourselves. How did our minds develop? What can

we remember of *how* we learned to read, write, spell, dance, play cricket ? At one time these things were difficult to us. At first we needed will, purpose, effort, and conscious attention in order to learn. When did these things become as automatic as they are now ? If we think of our mental virtues, *e.g.* power of concentration and attention, how did we acquire them ? If of our mental faults, how could we have avoided them and formed other habits ?

Among the forces which are continually acting on the young child, his lessons are of increasingly great importance, not only for his mind, but also for his will and character. And it should be noticed that mind and will constantly act and react. The discipline of the will is as important in the interest of the growing mind as the discipline of the mind is for the development of the will. "Let us consider our practice in early education. As soon as the child's physical life is fairly well established we begin to say that for half an hour or an hour every day the child shall *attend* to some one thing. For at first the child is a mass of chaotic interests and impulses, whose notice is attracted and fixed altogether by external occurrences ; but we insist that for a period every day he shall not allow himself to be distracted by anything. That period is called lessons. It scarcely matters what subject is taught : the vital matter is that the child should learn 'attention' in general. Gradually that period is extended, and the whole system of regulations, called 'discipline,'

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is developed, till 'lessons' and 'discipline' together cover nearly the whole of life: then the external pressure is relaxed again, and the individual is set free in the sense that he is now left to the guidance of the habits which discipline has created in him."¹

Teaching.—One great fact to be borne in mind with regard to teaching is that the child learns first through sense impressions: *i.e.*, he gains his ideas through the senses. (See Chapter II.)

"All education . . . takes place through the medium of the body. The sense organs are the doors through which entrance to the mental life is obtained, and the mind contains nothing which has not initially entered it through them."² And another writer says: "Apprehension by the senses supplies directly or indirectly the material of all human knowledge, or at least the stimulus necessary to develop every inborn faculty of the mind."³ Professor Welton says that in seeking the true nature of human life, these inborn faculties of the mind must be accepted, together with the influence of the external world on us, as the true determinants of the nature of experience. "Inborn nature, as we have described it, is a reality. The influence of the external world of men and things is equally a reality. But the reality of each is found only in combination with the other. . . . Life is throughout that inter-

¹ *The Nature of Personality*, William Temple, p. 28.

² Felkin's *Introduction to Herbart*.

³ Helmholtz.

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action between the individual and his surroundings which we call experience. . . . It is with such experience that the educator has to deal. He is part of the outer factor for each of his pupils, and as such he must try to influence the mode in which the inner factor of the child's nature interacts with other elements in the outer factor of his surroundings." He goes on to say that in childhood the outer factor in experience has more influence in the development of character than the inner, though even in its earliest days the baby is not a mere passive recipient of impressions, but puts forth activity to receive and react on them ; even a baby's random movements, when followed by satisfaction, tend to be repeated. In a baby's development, sensation comes long before perception ; perception being compounded of sensations gradually synthesized. Before a child learns to recognise a lump of sugar as, *e.g.*, a lump of sugar, he must handle it, look at it, place it in his mouth. He receives thereby impressions of heaviness through the muscular sense, of roughness through the sense of touch, of whiteness through the sense of sight, of sweetness through the sense of taste ; all these impressions, which singly are called sensations, are made into a whole by the mind as a perception of sugar. The sense organs, then, are the door through which the teacher obtains entrance to the child's mental life. It does not necessarily follow that the more carefully we train and perfect the senses the richer must be the contents of the mind. Still we

should give children plenty of sense experience ; we should see that in their earliest years they have the opportunity of realising an idea through a rich and varied number of sense impressions. For these reasons the instruction in the Kindergarten begins with the concrete : *e.g.*, we teach modelling before drawing, because the modelled object is more concrete than the paper picture. A child recognises a "woolly bear" before it would be able to recognise any picture of a bear.

The second great point in our teaching is that we must know, or find out by means of questions, what is in the mind of the child already, forming part of his "mental content," and link with that the new piece of knowledge which we desire to impart.

Herbart has worked out, in his theory of the **Five Formal Steps**, a method of instruction which is generally considered the best, because the steps are based on strict psychologic principles. Every lesson the child receives is divided and developed according to the psychical process which takes place in his mind. The mind has first to apprehend the new knowledge, then it must be aided to assimilate and arrange it, and finally to apply it.

The process of apprehension requires two steps on the part of the teacher. (i) She has to examine the existing store of thought in the child's mind, with a view to finding which of its many ideas are related to the new piece of knowledge to be given,

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and to arrange and fill out these ideas so that they are clear and in the right order to receive the new. This has been likened to ploughing and digging the soil before casting in seed. (ii) She has to present the new knowledge to be apprehended. These two steps are termed **Preparation** and **Presentation**.

Great psychologic importance is attached to introducing these steps by a **Statement of Aim**. This is made at the *beginning* of every lesson. It is generally a question or a fact of experience ; and it must be short and concrete. Its use is to arouse all the pupil's ideas on the subject, and to direct them to a definite point to be attained. For instance if the Statement of Aim were "To-day I am going to tell you about a squirrel," the Preparation might begin with the question, "What do you know about a squirrel ?" The Presentation would contain facts about a squirrel which were hitherto unknown to the children. In this case we will suppose it consists of information about a squirrel's method of climbing. The purpose of the third formal step, called **Association**, is to combine the particular ideas in the mind into some general law or rule, such as, "The claws and tail of the squirrel are adapted to climbing." This is done by comparison and contrast, *i.e.* comparing the squirrel's claws and tail with those of a cat, and contrasting them with those of a dog. The fourth step is called **Generalisation** : its purpose is to classify knowledge ; *e.g.*, such a statement as "The claws of all climbing animals have such and

such characteristics. The fifth step, called **Application**, has for its purpose the application of this new knowledge either to practical purposes or to the gaining of further knowledge: *e.g.*, the class might accurately draw the claw of a climbing animal.

How the teacher should be guided by these psychological principles in the lessons she gives, will be most simply illustrated by such concrete examples as those given below. The first example is on sense-training, and the second is on the five formal steps.

It should be said that it is not necessary for the teacher to introduce the steps so formally as, for the purpose of illustration, they are given in one of the following lessons.

Example I. Sense-Training.—A simple course preparatory to first arithmetic lessons, adapted for children from three years old.

(i) Lesson on Recognising Solids.—Place many objects such as spheres, cubes, cylinders, and other forms about the room where the children can find them. These forms may include the Kindergarten solids, and a great variety of like shapes, such as balls, which the children play with, a ball of worsted, an orange, rolls of paper and cardboard, cotton reels, boxes that are cubes, &c. Show a sphere to the children. Ask, What is this?

Let the children find other spheres, smaller and larger than the one chosen by the teacher.

Name all the objects like a sphere: *e.g.*, the ball of worsted, the orange, the red ball.

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Ask what is the largest, the smallest, sphere you have ever seen. (Use the word sphere when showing it to the children, and in speaking of it afterwards. The teacher should use the proper terms for all the objects in order that the children may unconsciously learn them. If the right term is associated from the first with the thing, it is a great aid to the power of expression.)

Work with the other solids in a similar way. The children should be led to recognise objects that are similar in form to the one shown them before they are asked to express what they see. Hence the teacher says, "Bring me a shape like this one," before she says, "Tell me a shape that is like this one."

(ii) **Lesson on Handling Solids.**—Let a child handle a solid with eyes covered. Uncover the eyes to find a solid like the one handled.

Cover the eyes. Give a child two solids. Ask if they are alike. Ask which is the heavier—the lighter? Handling the solids trains the muscular sense and also the senses of touch and sight. These three senses together give ideas of form. The children should try to model the solids in clay. This will help recognition of Form.

(iii) **Finding Circles, Squares, Triangles, &c.**—Show the children the circle at the bottom of a cup or ink-bottle, and ask them to find other circles. Similarly show them one of the square surfaces of the cube, and ask for other squares. Show the base of the triangular prism and ask for other shapes like

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triangles. The teacher may devise similar ways of teaching the children **relative magnitude**: *e.g.*, "Show me a cube twice as big as this one," &c. ; and relative length, "Draw me a line half as long as this one," &c.

Give the children other exercises on the above work, such as cutting out shapes from paper, larger or smaller than a selected shape, and in drawing rectangles, larger or smaller than a pattern rectangle.

Work on these lines should be continued until such simple relations as a half, a quarter, a third have been



grasped by the children: *e.g.*, the relation of A to B $\frac{1}{2}$. Of B to D is a $\frac{1}{2}$. Of A to D is a $\frac{1}{4}$. Of A to C is a $\frac{1}{3}$.

In this way also the children may grasp that A and B are in the same ratio to each other as B is to D.

A Mathematic Lesson.

Age of children, 6-7

Aim. **For the Teacher.**—To lead the children to see that the relation of 2 to 1 has a constant value.

Statement of Aim to Children.—We are going to learn what people mean when they say that something is twice another thing. And you will see how useful it is to you to learn that.

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Step I. Preparation.—[This step is a *recapitulation* of work done in former lessons. It arouses the ideas *already* possessed by the children.]

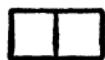
(i) The teacher draws a line 2 chequers long on a chequered blackboard.

(ii) The teacher lets a child draw a line on the blackboard twice as long as she has drawn.

The teacher asks, “How much longer is B than A ? ”
[Ans. Twice as long.]

The teacher says, “If I say A counts as 1, what will B count as ? [Ans. : 2.] The teacher, “Yes, we can say that the ‘relation’ of B to A is 2.” [The word “relation” is not a new word. It is a term the teacher has already made familiar to the children by a variety of examples.]

The teacher draws A and gets a child to make an oblong half as large. Teacher asks, “What is the

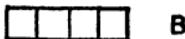


‘relation’ of A to B here ? ” [Ans. 2.] The teacher questions the children about the examples on the board till all have *recapitulated* the terms “twice as large,” “half as large,” “A is twice B,” “Two B’s will make A,” “The ‘relation’ of A to B is 2,” &c.

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Step II. Presentation of New.—(i) Draw figure A on the Board and get a child to make one half as large, and another child to make one twice as large.

(ii) If A costs 2d., how much would B and C cost ?



(iii) The teacher has a piece of string (5 inches) which is supposed to cost 1d. The children each have a long piece of indefinite length. The teacher tells the children to cut off 2d. worth, 4d. worth, measuring by her piece.

Step III. Comparison or Association.—The teacher now says, " My piece is five inches long, how long will your pieces be ? "

Step IV. Generalisation.—(i) The teacher writes column A on the board, and then begins column B, writing 2 opposite to 1.

A.	B.
1	2
2	(4) ¹
4	(8)
5	(10)
1d.	(2d.)
5 inches	(10 inches)
3 bricks	(6 bricks)

(ii) The teacher says, " I have written 2 opposite to my 1, now tell me what to write opposite each of the others to show the same relation ? "

¹ What the children apply is put in brackets.

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(iii) When the teacher comes to 1d. the children may say "Two." If so, the teacher must ask "Two what?" If the children say 2d., 10 inches, 6 bricks, the teacher may say, "Why may I write 2 pennies opposite to 1d. Why not inches opposite a 1d. ? Why inches opposite inches ?" So the teacher has gained the fact from the children that a relation must be between things of the same kind. They may not be able to express it like this in words, but they will begin to grasp the idea, and the point might well be developed in a further lesson.

If there is any difficulty, use more examples. *I.e.*, if I say I have 3 desks in this room, and I want to say I have twice as many in the next room, I must say I have 6 *what* in the next room ? &c.

Step V. Application.--[This takes the form of new problems. The teacher must use the diagrams on the board to illustrate the problems.]

(i) B is a wall built by 1 man in 1 day. How long would it take him to build A ? and how long to build C ?

(ii) If 5 men could build B in a day, how many men would it take to build A ?

(iii) A is a bath filled by 2 taps in 3 minutes. How long would it take 1 tap to fill it ?

(iv) A is a bath filled by 2 taps in 4 minutes. How long would it take the two taps to fill a bath the size of B ?

(v) If A is a heap of coal costing £2, how much would B cost ?

(vi) If A is coal lasting 6 months, how long would B last, if used at the same rate ?

(vii) B is a carpet covering a floor. C is a carpet covering another floor. If B cost £2 and is made of 4 squares, how much would C cost, and how large would it be ?

If the subject of the lesson were the story of Cinderella, then **Step II**, the Presentation would be the telling of the story. **Step III.** This might be a talk with the children leading them to compare Cinderella and her sisters. Cinderella had always to be working for her sisters and helping them. She had to think about them. In the end did some one think about Cinderella and help her ? **Step IV.** Something nice often happens after something difficult. **Step V.** (a) To plan a treat for someone who has had to stay indoors, or been ill, or had any disappointment. (b) Any exercise on the Presentation, such as to draw pictures of the story, to act the story, &c.

Comparison and generalisation are, as a rule, steps beyond children under five, and are not usually introduced in a lesson for them. It has been said above that the steps need not be so formally introduced : the teacher may get the children to compare and generalise at any point she pleases ; sometimes she may start from a generalisation made by herself or a child ; also several lessons may be given on a subject before the generalisation step is taken, and that step may occupy a whole lesson. But a lesson should always be applied in some way ; in the case of children

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this is usually termed "expression work"; the child draws, or makes something, writes or plays a game in connection with the lesson.

Books on the Theory and Psychology of Education.—These are given in the Bibliography at the end of the book. They are not technical in expression, and need no scientific knowledge of the subject. While they will show us our responsibility with regard to the child, they will also encourage us, and give hope to all our efforts.

CHAPTER II

PLAY AS A MEANS OF INSTRUCTION

Sense Training.—This forms a very important part of the work done by a Kindergartener. It is, of course, of very great value in Free Kindergartens and amongst children who have few opportunities for proper development of mind and body. All children require this training, and many children get it in ordinary ways, through their games and play ; but where this is not the case it should be specially given them.

Something has already been said in Chapter I of the psychological importance of this from the point of view of teaching. The present chapter will show that various exercises through which the senses are trained may often, if not always, form part of children's play. There is no particular order in which we should train the senses ; but it is plain that our knowledge starts from the impressions we receive through the elementary senses of touch, sight, and sound ; a baby gradually learns with the gradual development of these.

The earliest instruction, then, that we give little children consists in so using the elementary senses

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that other complex sense associations, such as the muscular sense, and the senses of form and rhythm, may be built up from them. This is best done, as has been said, through the children's games, and the ordinary experiences provided by their surroundings. Under the following heading some specific exercises for training the senses in this way are suggested. Under the other headings in this chapter, the teacher is left, as a rule, to see how the method of teaching necessarily involves the training of the senses. This does not apply to the paragraph at the end, in which the training of the child's imagination through play is described.

Some Kindergarten Exercises for Sense Training.—

Such terms as heavy, light, hard, soft, small, large, &c., are taught in Kindergartens through various plays and exercises. It can be done incidentally in the nursery as amusement for the little ones of three or four. The question, "Which is heaviest, this toy or that?" interests a child immediately, especially if he is shown how to balance a toy in either hand. "Why is this toy heavier than that one?" helps to lead the child to many little experiments and observations. He will perceive that weight and size are not necessarily connected if he balances a large wooden block in one hand and a small iron weight in the other. The child may at one time classify the toys as hard or soft, and at another time as larger or smaller than some special toy which the teacher selects. Another valuable exercise is to guess distances by the eye. The teacher

may say, "See if you can put your hands the right distance apart for this brick to fit in exactly between them." When the child has guessed once the length of the brick, he may then go on to guess twice or three times the length of the same brick. Let him play with a foot-rule and a yard measure, and guess the distances between the furniture in the room, or the height of objects, and afterwards measure to see if he has guessed rightly. A child of five so trained is mentally in a very different position to a child who has reacted very little in this way on the things around him. Various exercises are used by teachers to train the sense of touch. In some the children are blindfolded or told to shut their eyes, and given various shapes to feel; afterwards they must draw or describe the shape, whether round, square, &c. Building blocks might be arranged in the shape of a T, L, or H, &c., and the child, by feeling, say what letter is represented. In one method the sense of touch is used in the reading lesson, but here the child uses his eyes as well. The letters are cut out in sand-paper and put on cards. The child traces over them with his finger, saying the sound of the letter as he does so, thus at the same time associating the sound, the appearance, and the feeling of the shape of the letters.

The Sense of Form.—Training in this can again be given through the medium of the child's toys. His attention should be directed to the shape and size of his toys, and then he should model some of them in

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clay or plasticine. "Tell me all the things that you have seen round like your ball, or square like this block, or oblong like this one," are questions to which the child will respond with interest. He should afterwards attempt to model or to draw with chalk the things he has named. The Kindergarten occupations of tablet-laying and stick-laying are very good as a means of teaching form. Give these to the child as an occupation, first showing him how to amuse himself with them. Children love to make patterns with the tablets and sticks and to draw round them



and colour them. Encourage the invention of new designs.

Books giving suggestions for using the tablets and sticks can usually be had with these toys from the educational firms which supply them. The tablets are: the square, the isosceles, the equilateral, and the scalene triangle. Circular tablets, divisible into the parts of a circle, can also be had. When the children are older these playthings can be referred to as illustrations in simple geometry lessons, and in this respect familiarity with them is valuable. The Froebel Gifts are rarely used now as a means of instruction, with the exception of the free building occupation, and even this can be better done with the child's ordinary building blocks. The forms which belong to the second Gift are the most important for

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the child. They are the sphere, cylinder, and cube, but a ball, a cotton-reel, and a building cube will do equally well in teaching these forms. Tell him to look for other things shaped like the cylinder, and he will discover them in the pillar-box at the corner, or the trunk of a tree, or a roll of music. The forms in the second Gift and other solids: *e.g.*, the square and triangular prism, and the cone, can be had from Kindergarten firms. It is excellent that the child should possess these amongst his playthings, and that he should be helped to model them in clay, and then to notice the forms of the plane surfaces produced when (*e.g.*) the sphere, cylinder, and cone are cut in half.

Active Games.—Muscular exercise is very necessary for all children, and for little children the best form of such exercise is a good romp. Active games which require some skill and attention, and which train some sense in particular, are more fatiguing and do not take the place of a romp, nor do they always promote the same healthy feeling of exhilaration. Skipping, throwing the ball, the see-saw, swinging, bat and ball, the long and high jump, the game of ninepins, &c., train the muscular sense and the sense of sight in particular. Children are especially fond of the see-saw, walking on logs, or any game in which they have to balance themselves, and these are very good games. Little need be said of the educational value of dancing; the training that it gives in muscular control and in rhythm is excellent. Musical drill, running and marching

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steps, and other simple exercises, are a very good preparation for dancing lessons. The singing games and exercises of the Kindergarten are designed to train a child's sense and perceptions in many directions. The effect on the mind of movement to music is also a reason for their very frequent use. Let a child in a naughty tiresome mood march or run round the room to music ; and good temper and obedience soon follow. A list of books for musical drill and Kindergarten games is given in the Bibliography.

First Music Lessons.—It should be borne in mind, in training the child's sense of sound, that the expression "has no ear" is absurd. Every child has a sense of hearing, but some require much training and some little. It has been shown that the percentage of children who never develop any sense of pitch is so small as to be negligible. Singing is one of the most useful means of training the child's sense of sound. It is comparatively easy to teach children who have "a good ear" suitable songs ; but, where there is very little sense of pitch, the teacher should find out what note is easy for them to sing, and should make them sing that note several times after her. Gradually a note higher or a note lower may be sung, and the child may be asked to match that note, until the eight notes of the scale are acquired. Quite little children can be taught to read at sight easy singing exercises introducing only the intervals of the common chord. The intervals should be taught by showing the children, or better still, making them

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find out, the impression that the interval conveys, whether cheerful or sad, &c. It has been found a good plan to let children name the notes : *e.g.*, Doh = Home note, Mi = Mr. Sleepy-head, Soh = Mr. Bright-eyes, &c. They can then be shown that if doh is written on a line, mi is on the next line, and soh is on the next line, and top doh is on a space ; and when they have learnt this, and the reverse, they can be given any number of exercises in staff notation.

It has already been shown that rhythm can be taught by means of musical drill, games, &c., but special rhythm exercises should be given in the singing lesson. The children should be shown the meaning of the word "accent" from ordinary words : móther, to-dáy. They can then pick out the accented notes in a march or any rhythmical tune, and clap their hands to it. This leads to the next step of teaching them to beat time with their hands. After this they are introduced to the difference in length of notes. They very much like to show that they can sing a very long note and a very short one. "Pictures" of the different notes can be drawn, and the children should notice the difference in the drawings. The words semi-breve, minim, crotchet, quaver, are far too difficult for the little ones to master, but it is easy to substitute for these names others that will show them the difference in the values of the notes : *e.g.*, fourpenny note for semi-breve, twopenny note for minim, penny note for crotchet, halfpenny note for quaver. The corresponding rests should be taught as soon as the notes

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have been learnt. It is possible for the children, after they have read a considerable number of sight-singing exercises, to do a little very elementary musical dictation. The teacher sings a note and tells them that that is "doh," and the children write it, and then she sings another to "lah," and the children write that in the proper place on the staff. This lays a solid foundation for future musical training.

Number Teaching.—The baby-rhymes played with our toes and fingers, "This little pig went to market," &c., must have sprung from the educative instinct of the mother. Primarily perhaps they were to arouse the child's self-perception; but probably we all gathered our earliest perception of number from such games. Before the child has any regular lessons, the sense of number may be trained. Playing with the "button bag" and with empty cotton-reels has probably given many children their first lessons in arithmetic.

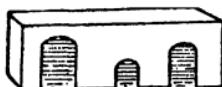
Bead Threading.—This is one of the earliest employments for little children, and is an exercise in number. The beads can first be threaded in two colours, one and one, and then two and two, and in other patterns involving counting. An amusement the children will enjoy, is to give each child a handful of large mixed beads or counters. The child who has first sorted the beads into their colours and counted each pile wins the game.

Number Grouping.—Playing with dominoes is a method of teaching number grouping. For little

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children make a set of cardboard dominoes ; each domino the size of a postcard, and with no number higher than 5 on any card. There should be many sets of each number. The cards are dealt out for the game. The leader holds up a card with one on it, and tells the players to put down a card which added to one makes three. Those who do so correctly may have a counter. The game continues until ten counters could have been won. It is quite easy to make these dominos. The numbers can be stamped on the card by a small cork dipped in thick black paint. The game can be made more difficult for older children by having the number groups up to 10. The questions should be as various as possible. "Hold up the fourth or half of this number." Or "Hold up any multiple of this number." "If this card were worth 6d., hold up the card worth 1s.," &c.

Another simple game, and a far more amusing one for little ones, is "Horses in the Stable." An empty shoe-box turned upside down makes the stable. In one long side cut three archways. A small archway in the middle, a large one on one side of it, and a



middle-sized one on the other side. At so many feet from the stable roll marbles or "horses" into the stable. The smallest doorway counts the most —five, we may say. The score can be kept in beans or counters until the children are able to write it.

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Other games of skill which teach number are number quoits and ninepins. The value of the number teaching in these games lies in making the children do their own scoring. 6747.

The Game of Shop may be organised so as to teach the children a great deal. Real scales and weights should be provided for this game, and the children weigh out ounces and half pounds of household groceries. Real money should be used, and bills made out and added up correctly. The children might take turns at being "accountant." A shop for drapery and fancy articles needs no scales. The shopkeeper, or teacher, should give little exercises such as, "You can buy 3 inches of this ribbon for 1d., but you want 6 inches. How much money must you give me ? If 2 of these beads cost 1½d., how much do 4 cost ?" When the children are thoroughly accustomed to real money, coloured counters may be used instead. White counters may count as pennies, red ones as halfpennies, a green one as sixpence, &c. But it is important to use real money first in teaching money games. The money should be kept by the teacher and returned to her to put away after the lesson. It is supposed that the children who play this game are about seven years old, and that they already do regular lessons. The bills and little problems in connection with the game of shop may be written and worked in books at lesson times.

Imagination.—We should also through play try to awaken the child's imagination. The educative

value of children's play lies in its being a medium for the child's self-expression. Play is to children an interesting and absorbing thing, and we should help to make it so by giving the child a few suggestions. If children are encouraged to act or play at the stories we tell them, it cultivates their imagination and opens a world of amusement to them. The stories may also be carried over into quiet occupations. For instance, after the story of the Frog Prince, the building blocks can be used to make the castle in which the Princess lived, and to build the well. A doll can be the Princess and a toy frog the Prince. We should invest many of the child's toys with a story or meaning. Delightful stories can be made up about engines and trains and other mechanical toys, and then the child will quietly pursue his game with them long after he is tired of merely winding the engine up and setting it going. We can do nothing worse than be constantly amusing and paying attention to the child ; but by arousing his imaginative powers, and by a little suggestion as to how he might make his own toys and employ himself with them, we shall help to develop that resourcefulness and reflection on which much of his after happiness depends. The number of ready-made realistic toys with which children are so overloaded tends to destroy this power of imagination, and the child never has that strange personal sympathy with his toy, which makes it so valuable to him.

Suggestions for making children's toys are given in the chapter on Handwork.

CHAPTER III

THE TEACHING OF READING AND WRITING

Training in Language.—Speech-training in any form but the most elementary is often neglected. Before the child begins to learn to read, he should be able to express himself in speech about ordinary things with some accuracy. This training forms one of the features of the Kindergarten. Every morning the little ones from 3 to 5 years have a “morning talk.” They tell their teacher about their work, games, and play, or anything that they may have done or heard, and the teacher questions the children and helps them to give intelligible accounts of their doings. In another lesson a simple little tale is told, and the children are required to repeat it again. This is an important exercise in memory training, and also a test of intelligence; often the teacher’s questions will show the child some necessary point in the story which he has hardly grasped, or has forgotten. Later on, but before the child learns to read, these informal tales are, in the Kindergarten, supplemented by more formal lessons in pronunciation and correct enunciation of words, the child being given exercises in detecting the various sounds of which a

word is made up, and in learning how to produce those sounds rightly. As a rule a child should not be taught to read until he is five years old, and if he then shows no interest or aptitude for it, he may well wait another year. The psychological moment for teaching a child to read has come when he asks to learn to read, and shows a desire for it; he then learns in a few weeks what before it was mere drudgery to try to teach him. Some children of five, or even younger, have this desire to learn to read, and in that case they might be allowed to do so. Most children wish to learn to read when they are six years old, but usually rapid progress is made shortly before seven years. Much practice in reading should then be given, and the child should be encouraged to read independently of the teacher.

Methods of Teaching Reading.—The old way of teaching reading was by the alphabetic method. The letters of the alphabet were taught and combined to form words and syllables, and there was no connection between the sound-value of the letters and the word spelt. This method is practically obsolete in schools, though unfortunately it is not yet so in the home. Among educationalists it has now no defenders, and we shall not regard it as a possible means of teaching a child to read. With the alphabetic method came the phonic, *i.e.* to spell a-t, at, c-a-t, cat, &c. The **Phonetic Method** is a development of the phonic method, and it is the one most generally used now. There is also the **Look and Say Method**. In

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this whole words, sometimes whole sentences, are taught together. The child is required to visualise the word, not to learn to combine the parts of it. This method taken alone does not lead to very accurate reading, though it is said that it produces more expressive reading. It may also be a drawback to the child later not to know the sounds which make up words. It is best for the teacher to understand both methods, and to combine them in her teaching.

The Phonetic Method.—The Dale system of reading is the one most frequently used in teaching by the phonetic method. It is most systematically taught in Miss Dale's school at Wimbledon. Miss Dale has made a most thorough and scientific study of English speech sounds and the exact method of producing all of them. One advantage of teaching children this method carefully is that it is now much used in the teaching of modern languages. It also trains the child in articulation and pronunciation, and counteracts a slipshod method of speaking and reading.

The Dale Readers.—A special set of graduated Readers is supplied. The order is as follows :

1. *Steps to Reading.* 2. *First Primer.* 3. *Second Primer.* 4. *Infant Reader.* These are supplied by Messrs. Dent, together with an explanatory book *On the Teaching of English Reading.*

There is also Book I, a more advanced Reader, and *Further Notes on the Teaching of English Reading*, both published by Messrs. Philip.

In the *Steps* and the three following Readers only the short vowels are taught, and all the consonants, and with these the children are made thoroughly familiar. The book *Further Notes on the Teaching of English Reading* will show the teacher very clearly how to teach by this method. Without this book it will not be possible for one who does not know the system to teach by it.

¹ **Lesson on a Sound with its Sign.**—1. A story introduces a special word beginning with *p*, e.g., pig. The story can be told in connection with an embroidery card.

2. The word is repeated, and the initial sound is discovered by the child.

3. The child is helped to find out how the sound is produced, *i.e.* the lips pressed together and opened suddenly, allowing the breath to come out, gives the sound heard at the beginning of the word *pig*.

If the child holds the hand in front of the mouth when doing this, he will feel the force with which the breath is expelled.

4. The sound is then compared with any other sound they may have heard. (A puff-puff.)

5. When the child has realised the sound, the symbol representing it is introduced.

6. The simplest form of the sign is used, bold plain printing type. The name of the symbol is not given. (A set of coloured letters should be obtained with the Readers.)

¹ Adapted from a Dale Reader.

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The child is told whenever he sees this particular sign he will know his lips must be pressed together and suddenly opened, so as to make the sound *p* (pig).

The symbol *p* is then shown to the child, and he should describe it. It is printed large on the black-board or drawn with chalk on a piece of paper. The child may draw it in the air with his finger, and then print it himself.

In Miss Dale's system the soft or *voiceless* sounds, as *p*, *t*, are printed in blue, and the *voiced* sounds, *d*, *b*, in black, the vowels are in red. She also uses a tabulating frame on which the signs are hung, and placed in accordance with the manner in which they are produced, *i.e.* the lip sounds, *p*, *b*, hang first.

Of course it would not be necessary to set up the apparatus for one or two children learning at home. Any piece of board with small hooks screwed into it can be used to imitate the frame, or a piece of mill-board with drawing-pins instead of hooks, and the letters hung on to them by a thin string.

The method of teaching every sound is given in *Further Notes*. The children rapidly learn to combine the sounds into words. *Steps to Reading* and the three following books can easily be read in a year, between the age of 5 to 6½ years. Book I introduces all the long vowels and other peculiarities of sound. If the child has been through this by the time he is seven years old, he is ready for any ordinary easy reader.

The disadvantage of this particular system is that

it ties the child to one style of Reader ; the interest will depend on the way in which the teacher enlarges the little story, adding interesting details of her own.

The phonetic system of learning to read is less elaborately explained, and yet sufficiently so to guide the teacher, in the Introduction to a book called the *Rose Reader* (Methuen).

Look and Say Method.—In the Look and Say Method, whole words or whole sentences are taught to the child. In the Readers, the words and sentences are frequently repeated in very slightly different connections, so that the child gets plenty of practice in recognising the words. The teacher first tells a story, and the words and sentences about the story are then read by the child. The story is usually a continuous one. One of the best Readers on this system is the *Hiawatha Primer* (Harrap). The following is an illustration from the book. A story is told of Hiawatha, a little Indian boy, and how he lived with his grandmother Nokomis in a wigwam by the Big-Sea-Water. Each sentence in the book is illustrated by a picture.

“ Hiawatha was an Indian boy.
Nokomis was his grandmother.
Hiawatha lived with Nokomis.
Nokomis lived in a wigwam.
Hiawatha lived in a wigwam.
The wigwam stood by the water.”

Red Indian tales appeal to a child’s imagination. The Primer fascinates him from the first, and this

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interest on the part of the child is one of the great advantages of this method ; then, too, the subject matter of these readers is good, usually based on some literary or classic tale. After the Primer any ordinary reading book can be used. *Myths of the Red People* (Ginn) is a very easy children's book of Indian Legends, and follows well on the *Hiawatha Primer*.

The Combination of the two Methods.—*Lessons for Beginners in Reading*, Florence Bass (Heath & Co.), is a reading book which combines the Look and Say with the Phonetic Method. It is a book very highly to be recommended for first reading lessons. The Look and Say Method is employed exclusively in the first dozen pages. The words and sentences are all illustrated by pictures, and are of a nature interesting to the child. The words are both written and printed. To learn the appearance of the written word in conjunction with the printed word does not appear difficult to most children. When the child can fluently read and talk about the objects introduced in the first few pages of the book, some words are then separated by the child into their component sounds, and similar words are learnt. The sounds of *ee*, *oo*, *ou*, and other vowel peculiarities are introduced quite early into the book. There is a good preface explaining the method to be followed by the teacher. The *Hiawatha Primer* would follow very well on this book.

It would be a pity to leave this section without mentioning the *Golden Primer*, illustrated by Walter

Crane. This is a little book which would delight any child's heart to possess, and the few short easy words which explain the pictures could easily be read without help by any child taught on the phonetic system.

Spelling.—Regular lessons should be given in spelling. As soon as the child can print or write words, single words containing similar sounds may be dictated to him to write, or to make with a box of letters. There are excellent spelling lists at the end of Book I of Miss Dale's Readers. The child should prepare all dictation lessons by studying the appearance of the printed word. Word-building lessons are an aid to spelling, e.g., *ash*, *l-ash*, *f-lash*, &c.

Writing.—This should first be taught in conjunction with the reading lesson. The signs of the sounds, or short whole words, should be printed by the child with chalk on a small blackboard. The free-arm movement should be used. Chalk and bold thick lines are much better for tiny fingers than pencil and paper. The words can also be drawn with a stick or finger in damp or dry silver sand, pressed or shaken smooth on the surface of a tray. Writing letters can be similarly practised. The children may amuse themselves for a long while with this occupation. Children differ very much in their ability to handle a pen or pencil. In some children the hands appear to develop very quickly. Writing with pens and pencils should not be begun till the child has considerable control of the hand. All handwork, such

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as Kindergarten clay modelling and brush drawing, is especially good to develop the hand. Curves and lines may be done with the brush preparatory to writing, but not the actual letters. The brush is held lightly, and will help the children to hold the pen lightly.

Position of the Child in Writing.—This has long been a vexed question. The free-arm movement is now considered the best for children. This is done standing at a blackboard, or with the blackboard at a slant on the table. In writing with the pen, the forearm may be on the desk, and the whole arm may be used as the child forms the letters and travels across the page. The fingers are also used to form the curves of the letters, but the wrist and finger movement is not used exclusively as it was. The hand should be supported by the third and fourth fingers, *not* by the palm and side of the hand. This gives much more rapidity and freedom of movement. The pen is held between the thumb and first and second fingers.

If the child's writing is to slant slightly to the right, the easiest movement of the arm in carrying the hand along the line is secured by not placing the paper, as is usually done, parallel to the edge of the desk, but by inclining the paper so that the base line of writing is at right angles to the fore-arm as it rests on the desk. The pen should then be held perpendicular to the edge of the desk.

Children may be allowed to practise this method

of holding the pen, and the position of arm and hand, and the free use of the fingers by moving the pencil rapidly along the page, working the fingers but making no stroke on the page. It is far easier to get both the position and the action right if no attention need be paid to the form of the letters, therefore the child should be allowed to scribble freely, as long as he is using arm and hand in the way described.



Much practice should afterwards be given to the single letters and short words. An exercise book ruled in double lines about $\frac{1}{4}$ inch wide should be used, or else single lines placed far apart. Such books can be had from any educational firm. The pencils should be good and dark, and the pens should be soft.

Children should not be taught according to the elementary school method, in which it is necessary partly to retrace the letters in order to join them. The child should begin each letter afresh, trying to form it so that it will touch the last letter. Each child will then naturally discover how to join the letters, and will develop his own individual running hand. In early stages legibility must be made much of. This is attained by careful formation of letters after the simplest method, and by that freedom of position for the hand described above.

CHAPTER IV

ELEMENTARY MATHEMATICS

THIS chapter presupposes that the incidental number and form teaching, given by means of the child's playthings and occupations, has been done, so that we can at once consider the more formal arithmetic lesson.

In beginning arithmetic with children, the very best method should be used. Children from five to six are very impressionable, and they should be taught in such a way that they may clearly grasp the principles of number.

The Tillich Bricks.—This box of number blocks is one of the best ways of beginning with children. The box may be had from Messrs. Philip & Tacey, Large Scholar's Box, 2s. 6d., and with it should be bought *First Lessons in Arithmetic*, Ferdinand Schneyer (George Bell & Sons). When the child has had some lessons with the bricks, he may well be allowed to use them alone, as through using the bricks and playing with them he will learn a great deal for himself.

The bricks count from one to ten.

I. It will be seen that the principle of these blocks

is to teach arithmetic not through isolated *ones*, but by a series of relative magnitudes. Two is twice as large as one. One is half two, &c. By this



method the danger of mere mechanical work is largely done away with, the child learns to form judgments, and to reason about the relations of one number to another. In the first lesson the child should be shown all the blocks from one to five. He



should name them in their order. "Walk up the staircase from one to five and back again." Then the blocks should be shown separately, and the children should name them. Then make the staircase again and remove one or other block, and let the children say which block has "gone away."

II. In the next lesson the staircase may be made

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up to ten. It should be counted up and back again. Quick children will walk up the staircase and down again "without falling" very soon.

III. Thirdly, the ten blocks should be mixed up, and the child asked to name any block held up. If eight is held up and the child does not recognise it, lay the block down and place seven, six, &c., beside it, till the child comes to one he does know.

Importance of Brisk Work.—It is important to do all this work briskly, and to insist on brisk answers, as it helps to make a brisk mind. Therefore the actual lessons should be short. It is very important that the arithmetic lesson should not flag. The teacher should endeavour to prevent flagging attention on the child's part in every possible way. The arithmetic lesson should be above all else a cheerful lesson.

The right relation between the child and the teacher is one of friendliness. We do not wish to be dragons making the child do what it dislikes, nor will this enforced attention give us any good results. I remember an old lady, a very well-known educationalist, telling me that she always contrived to bring in a joke during her lessons. This is the spirit by which we may be sure that we shall have the child on our side. The arithmetic blocks may be made the child's personal friends. We may speak of little Mr. One and big Mr. Ten—Little Fellow and Big Fellow. Little Mr. One invites Mr. Ten to stand beside him. Mr. One would like to grow as tall as

Mr. Ten, whom shall he invite to help him ? If it is suggested that Mr. Nine will be so kind, Mr. One now stands proudly as tall as Mr. Ten. Naming the blocks in order may be called "walking up the staircase." A mistake is a "fall." Generally the "falls" happen on the way down. Various blocks may be removed from the staircase while the child "goes to sleep." He loves then to look up and name those which have gone to "hide." If he names them he "catches" them, and they must come back. They will not walk into their place without their friends on either side being named ; then Mr. Five will return happily to Mr. Four on one side, and Mr. Six on the other. If Mr. Five should jump into the wrong place he will quickly be told where to go. One day Mr. Two says he should like someone twice as tall as himself to play with. Who must it be ? Little Mr. Three would like to look over Mr. Eight's shoulder. Who should come to help him ? Many similar ways of keeping the child bright and happy over his lessons will suggest themselves to the teacher. The result will be shown in the interest the child has in his lesson. If arithmetic is well taught it usually becomes the favourite subject with little ones. After the lesson the child will like to interest himself with the blocks alone.

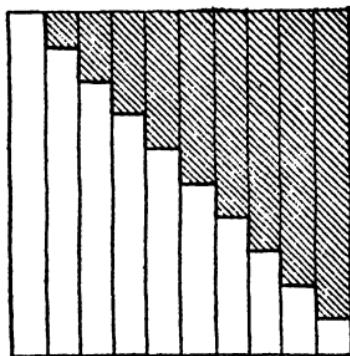
Comparison of Numbers.—Directly the child is thus familiar with the blocks, lessons comparing them should be given. First we should compare those between which the difference is greatest. "Little

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one and giant ten." Then we go on to find the relations between numbers, *i.e.* which is greatest, block one or block three? By how much is three greater than one? By how much is five greater than three? Two and four, four and eight, should be compared. Presently the child should be able to build up any figure in different combinations and to make any figure into a smaller figure.

The staircase may be built up until a solid wall is made, and the child may say these tables as he fills in the staircase:

$$\begin{array}{ll} \text{(i) } 1 + 9 = 10 & \text{(ii) } 9 + 1 = 10 \\ 2 + 8 = 10 \text{ &c.} & 8 + 2 = 10 \text{ &c.} \end{array}$$



Analysis of Ten.—In this way the analysis of ten may be thoroughly practised. In future addition sums it is important to be able to add rapidly any combination of ten. This may be easily done with the blocks, but the analysis of ten will not be mastered readily by children of five, and not always very rapidly by children of six. Even if it is done readily

in the concrete, it will not become an easy mental operation until the child is nearly seven years old. It is unwise to spend any great length of time trying to make this operation sure and mechanical. Opportunity should be given to the child to use coloured counters, beads, shells, and combine them into ten in various ways. He will thus practically learn for himself.

Child's First Bookwork.—It will be seen that the blocks may easily be drawn and represented by the child on chequered paper, and from the first lesson onwards this should be done. It will give variety to the lessons, and will be a means by which the child may learn to express himself. The figures may be written in the blocks thus drawn.

Counting up 100. The 10 times Table.—Most children are very anxious to count further than ten, and long before the analysis of ten becomes a mental operation they should be allowed to do so. (a) Tell the child he is going to count the number of tens up to 100. (b) Arrange the bricks in tens side by side, flat on a table. (c) Let the child count one ten, two tens, &c., up to 100. (d) Count by the names ten, twenty, &c., and often ask how many tens do I mean when I say thirty, fifty, &c.? Children easily learn to say and write the 10 times table up to 100 by this method. Let them also divide the 100 into 2 sets, *i.e.* fifty in each block. Take blocks of 80, 60, and let the child cut them into 2 forties, 3 twenties.

Here again comparison of magnitudes should be

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pointed out, *i.e.* the relation between 20 and 40, 30 and 60 is a half. Fifty is 20 greater than 30, and 70 is 20 greater than 50, &c.

The value of leading the child to discover these

relations is very great; and prepares the mind, as nothing else will, for a clear understanding of arithmetical principles.

The 5 times Table.—When this stage has been reached, build up a hundred with single cubes, beans, shells, or any other available material, cut all the tens in half by a perpendicular line, and count the 100, “jumping” this time by fives not by tens. The child will like to draw this, and to write out the table :



		5		10
		15		20
		25		30
		35		40
		45		50

$$1 \times 5 = 5$$

$$2 \times 5 = 10$$

$$3 \times 5 = 15$$

$$4 \times 5 = 20 \text{ &c.}$$

With single cubes any number may be built up and “cut up” into its parts, and any tables may be learnt and written out.

Bookwork.—Do not make it the first object to teach the child to do sums in books. The time spent in thoroughly grasping the principles of the first four rules through concrete examples is never wasted, and it will lead to much quicker bookwork afterwards. For the slow child the concrete method is invaluable, and though the quick child may make the transition to abstract work very much more quickly, it is also for him the method by which he will gain accurate and clear ideas. The child may at first draw his sums on chequered paper, combining the blocks in various ways.



When he knows his figures, the written sums should be very easy equations, such as $2 + 2 = 4$.

In bookwork, neatness should be insisted on from the first. Such small equations as :

$$2 + 2 = 4$$

$$4 + 4 - (1 + 3) = 4$$

$$3 + 2 = 5$$

$$7 + 2 - (2 + 2) = 5$$

$$40 \div 2 = 20 \text{ (in each part)} \quad 10 + 4 - (7 - 3) = 10$$

should always be arranged with the arithmetical signs underneath each other.

Other Methods of Concrete Work.—If the blocks are not used, the teacher can arrange large beans in

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rows of tens and analyse the numbers thus formed. Any even number may be placed in a row, and the child may cut it up first into half and then into other divisions, laying a match between them.

○○○○○|○○○○○|○○○○○|○○○○○

Matches and little rubber rings make a most useful apparatus. The child should make the matches up into bundles of ten. Ten bundles make 100, 20 bundles 200, &c. With these it is easy to do such sums as, $26 + 37$, $41 - 25$, &c.

I. (a) Add the units 6 and 7. These make 1 bundle of ten + 3 odd matches.

(b) There are now 6 bundles of ten + 3 matches. **Result, 63.**

II. (a) $41 - 25$. Take 4 bundles of ten + 1 odd match.

(b) Take 5 matches from 1 bundle of ten, add the 5 left over and the odd match.

(c) Two tens have now to be taken from 3 tens. This leaves 1 bundle of ten + 6 matches. **Result, 16.**

The sum may be written and worked in books so ;

$$\begin{array}{r} 41 \\ 25 \\ \hline 16 \end{array}$$

For general arithmetic teaching a valuable book is *Spear's Arithmetic* (Ginn). The whole teaching of elementary mathematics is very clearly dealt with,

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and the relations of number are so simply illustrated that children soon grasp such problems as ;

4d. will buy how many times as many counters as 2d. ?

If you can buy a yard of silk for 4s., how much can you buy for 2s. ?

Elementary fractions are also well taught, for instance the bricks 1, 2, 3 in the Tillich blocks may equally be called $\frac{1}{2}$, $\frac{2}{3}$, 1.

When the relations of 1, 2, 3 have been grasped, we may ask the child, If block one cost 1d., what would block 2 cost ? If $\frac{1}{2}$ cost 2d., what would $\frac{3}{2}$ cost ? &c. It would be well worth while for anyone who wishes to prepare a child well for entering the First Form of a good school at the age of eight years, to use this book.

Elementary Geometry.—*Spear's Arithmetic* introduces elementary geometry, and to continue this subject *A First Geometry Book* (Hamilton & Kettle, 1s.) would be very useful. It is full of clever suggestions for making apparatus which will illustrate the lessons.

Weights and Measures.—When the child learns measurement he should first make his own ruler out of a strip of cardboard, marking off the spaces with an inch cube.

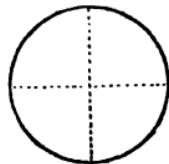
1 2 3 4 5 6 7 8 9 10 11 12

The child should have his own balances and learn

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the proportion of the weights. He should be shown a two-quart jug, and a quart jug, and a pint jug. He should see the connection between an inch divided into 4, and an ounce and a quart divided into 4; this will lead to endless little sums and problems.

Where the child's education is undertaken at home too much can hardly be said of the importance of teaching by some of these methods. It only dulls the child's brain to work mechanically. How many children tell us they hate arithmetic! This is because they have never felt the joy of reasoning out little problems with concrete material. They have never felt the interest shown by quite tiny children when they try, for example, to make a square twice as big as this one, or to fold a paper circle into halves and quarters.



CHAPTER V

HANDWORK

Reasons why Handwork should be Taught.—Children always want to be doing something ; it is this desire which is made use of in the handwork lessons, and which we ought to train and stimulate. Other qualities, such as love of work, joy in origination and invention, are equally fostered and guided in this form of children's occupation. Handwork also calls into play mental powers which would otherwise remain only partially used, and which are a great factor in stimulating general intelligence.

All educational handwork as taught in Kindergartens, and, later, the manual training given in schools, is intended to train and educate the child in a way which is quite as important to him as the training given by the ordinary school subjects.

Educationalists do not now consider theoretical knowledge sufficient in itself, but they lay stress on practical experience ; and the handwork the little ones do is a step towards practical experience. The child in making and doing gets into touch with real things ; he must observe closely and acquire some little accuracy of performance if he will succeed in

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his work. He learns to manipulate different materials, and develops some dexterity in the handling of them.

The child's handwork may appear play to us, but when we see him engaged in it we realise that it is not play to the child, but work ; and as he does it he is actively applying his intellectual faculties to practical uses.

Handwork should also be looked upon as an exercise for the child's originative powers, and a means by which he may express his ideas. Scope should be given him to do this. For this purpose he should be allowed the free use of material ; while he will use the help and guidance given him in the handwork lessons, in developing his own ideas in his play hours.

Result.—The result of this will be steady and happy occupation in which the child exercises his powers of invention and originality. This occupation will be a source of happiness to him because his work is done for the sake of working, and these happy self-employed hours will react both on the child's character and on his general health. Healthy amusement of this sort will make outside excitement such as cinematograph shows, theatres, &c., unnecessary ; and this is obviously very desirable in the case of young children.

Handwork should not be Mechanical.—While on the one hand it is necessary to give the child some guidance in the handwork lessons, they must not be

allowed to become mechanical occupations, or their educational value will be lost, and the work will be drudgery. Handwork should not be taught isolated from ideas, the children's interest and joy in their work is aroused and sustained because they are carrying some idea into execution. One good way of doing this is to let the children furnish their own doll's house completely. Nearly all the furniture can be modelled from paper and cardboard or made out of boxes. The painting and papering can be done by the children, and the carpets, rugs, and straw mats woven by them. Or else the handwork may take the form of making the articles mentioned in *Hiawatha* and the Red Indian stories, and some articles may be made simply as presents, or for common use.

Handwork Occupations.—A very short account of these will be given, referring the teacher to the sources whence she will get ample help and instruction for teaching children. The most usual of these occupations are Clay Modelling, Brush and Chalk Drawing, Paper-cutting and Pasting, Paper and Cardboard Modelling, Woodwork, Needlework, Weaving, Cane and Rafia work.

Clay Modelling.—Modelling either with clay or with plasticine is one of the easiest occupations. Children of three should be allowed to do this as an amusement. It is good later to help the children to model common objects, such as making a tea-set in clay, or animals for the Noah's Ark. Criticise the children's

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work very sympathetically and endeavour to show them the shape and proportions of the object they are making. Books : *Play Lessons in Modelling* (1s.) *Plastic Methods for Plastic Minds*, Harbutt (1s. Philip & Tacey).

Chalk Drawing.—Chalks are an excellent medium for children. It is a good plan to use mass drawing in connection with clay modelling. In this, the outline of the objects is not drawn, but their mass is filled in with chalks. The illustrated catalogues of the Kindergarten Departments of Messrs. Charles & Dible, or the Educational Supply Department will give plenty of suggestion both as to material to use and manner of teaching this occupation. For books on drawing for little children see Messrs. Dible's catalogue of publications, or use Waite's *Chalk Drawing for every Season*.

Brushwork.—One of the most helpful books on this is *Brush Drawing*, Mallam (George Philip & Sons). It is chiefly, if not entirely, on flowers. It is quite sufficient to direct the children's attention to the form and colouring of the flower, and then to allow him to attempt to paint it. Miss Mallam shows very well how this should be done. Other brushwork books are ; *Brushwork Copy-books*, Elizabeth Yeats (1s. 6d. Philip & Tacey), *Elementary Brushwork Studies* (Yeats, 5s.).

Many suggestions will also be furnished by any catalogue of Kindergarten materials.

Paper-cutting and Pasting.—This occupation is

best followed out by making a scrap-book. Free paper-cutting is a good training in form. Here the objects are cut out without any outline, and they should be very simple, such as, for example, a loaf, a plate, a laurel-leaf, &c.

Pictorial Paper-cutting, Lilian Elliott (1s. Charles & Dible) will be found a useful book.

Paper and Cardboard Modelling.—The work that can be done in this respect is very delightful for children. In its easiest form the paper is folded and then cut ; a little pasting is usually required, and most fascinating articles of furniture for the dolls is the result. Good books on this subject are : *Paper Modelling for Little Ones* (Annie Wood, 2s.), *A Course of Simple Paper Modelling without a Ruler* (2s. 6d. Butler).

Better things can be made when the children can use ruler and pencil. Miss Swannell's book *Paper Modelling* (2s. 6d. Philip & Tacey) and Carton Paper Modelling, Junior Set I., Carton Models, 12 Cards, Educational Supply Association, give full directions as to how to make many things, and can easily be adapted as illustrations for the children's lessons. The Indian wigwam and bark canoe are very easily constructed out of brown paper. Instructions as to how to make Red Indian articles are given at the end of *Myths of the Red People* (Ginn). Miss Otty's book on Toy Making, *The K.G. Toy Box* (Arnold, 3s.), is so good and so full of suggestions that children ought never to want to buy any toys who

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are allowed the fascinating occupation of making their own, according to the directions in this book.

Weaving.—*Weaving for Little Children* (2s. net. Philip & Tacey) should be used for this subject. The articles to be made are delightful. It is very easy work for children, and a good winter occupation. It is much better if the occupation can be started in conjunction with some story or history lesson involving a description of primitive weaving. *Rafia Work*, Swannell (Philip & Tacey) and *Bast or Rafia Work* (Wontrina A. Bone) are very simple books for little children; both woven and plaited articles are described in them. The most useful books on **basket work** are: *Cane Weaving for Children*, Lucy Latter (6d. Philip & Tacey), *Useful Cane Work*, Jacot, *Cane Weaving*, Lilian Timins (9d. Charles & Dible). Most of the articles are too difficult for children under seven or eight. Country children should cut willow twigs and be helped to make the model of a **Kaffir hut**, or the wattled hut of an ancient Briton.

Woodwork.—Furniture for the doll's house, chairs, tables, cupboards, a kitchen dresser, &c., can be made from cigar boxes. The wood cuts up well with a small saw, and then only a little glue is required. The children should measure and plan the cutting up of the wood for the articles they are making. A strong deal table can be used for a carpenter's bench, and the wood to be sawn fastened to the table with an iron clamp.

Needlework.—Little children should not do any plain sewing ; but they may be taught some stitches, using coloured threads on contrasting materials. With a simple oversewing or buttonhole stitch such articles as pincushions, needlebooks, penwipers, small bags, &c., can be very effectively made. Wool and canvas is also suitable for children. A good book treating needlework as an art, and containing suggestions for work for children of six years, is *Educational Needlecraft*, Margaret Swanson and Ann Macbeth (Longmans). The book also shows how to apply the child's ordinary knowledge gained in measuring, and in Kindergarten paper-folding and cutting, to the cutting out of simple articles.

CHAPTER VI

FIRST LESSONS IN OTHER SCHOOL SUBJECTS FOR CHILDREN OVER SIX

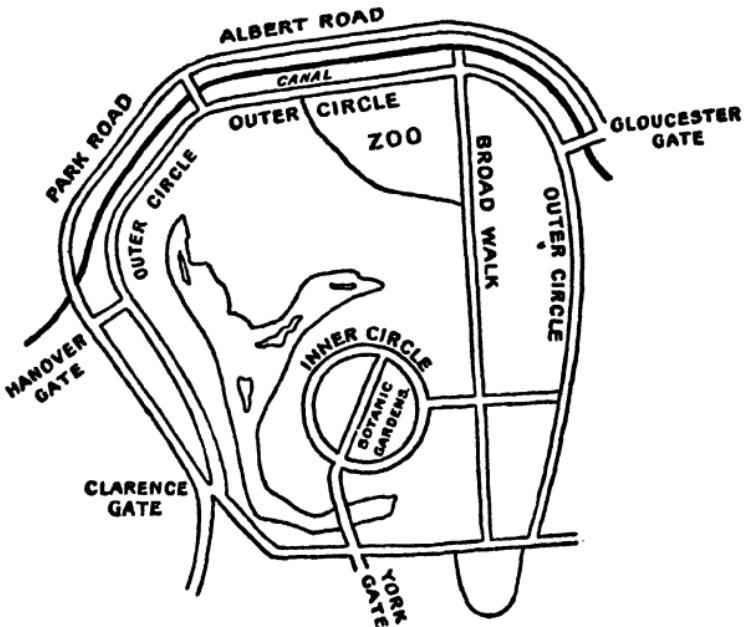
Object of First Lessons in these Subjects.—Such subjects of the school curriculum as Geography, Literature, History, Nature Study, or Elementary Science come in a very simple way within the sphere of the lessons which we give to children from six to seven years old. The development of the child's powers, not the imparting of knowledge, is the aim we should set before us, and it should underlie and guide our whole method of treating these subjects. The aim of the Literature lesson should be to cultivate the child's imagination, to fill his mind with beautiful and worthy ideas, awakening in him the power of sympathy, and enlarging his conception of the world around him. In Geography and Nature Study more especially we endeavour to develop his observing and reasoning faculties and love for all natural and living things. Keen, sympathetic interest in the things around him, combined with the habit of thoughtful attention to phenomena, as presented to him, and a reverent love towards life, are gifts and powers which it is as easy to awaken and to foster

as it is to let the child grow selfish and pleasure-loving, dependent on the amusement specially provided for him. These powers of appreciation will be forces which will abide with the child, and influence him in all his after life. Not knowledge of facts, but the power to think, to wonder, and to love, is the true end of education. This is our aim and hope as we tell the child some tale of the Greek heroes or of a great Antarctic explorer, or help him to think of what has resulted from the industry and faith of some early inventor, or as we lead him to note some aspect of nature, to watch the birds, or to take charge of some pet. Children from six to eight are so easily influenced by these things that we must be careful not to miss this great opportunity in our work of education.

Geography.—The home district should be the subject of the first geography lessons. The children should make a plan of the nursery and schoolroom. This can be done with building cubes. If the room is 16 feet long and 12 feet wide, a line of 16 inch-cubes will represent the length, and 12 inch-cubes the width of the room. The children should measure the room with a footrule. This plan may be drawn in chequered books, one chequer to a foot. They should then plan out the direction of the roads which they take in their walks. If these are first laid in lines with the building cubes and 2 cubes count as half a mile, the children begin to gain some idea of the meaning of drawing to scale. Town children should

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work at the geography of the home district with the help of a sand-tray, or a sand-heap in the garden, if they have one. For example, if the child's home is near Regent's Park, the park with the inner and outer circles, and all the gates, should be constructed in the sand with the canal and bridges, the Botanical



Gardens and the Zoo. The children should then draw a rough plan on paper from the plan in the sand, and thus they gain an intelligent idea of what a map really is.

It is easy to see how this manner of teaching may be applied to making a map of London and the district, or in the case of country children to a map of the village and surrounding neighbourhood, with

the streams and hills. Some idea of a river and watershed should be given to the children from what they can observe of this for themselves, as by the action of rain on soil. A watershed and river-course may be constructed in the sand-tray, and a plan of it drawn, and all the help that pictures and description give should be added. Country children may be able to follow a little stream to its source. The trees, flowers, and animals of the home district should be studied in connection with such a geography course. The children's lessons must follow some such method as this in order to prepare them for modern geography-teaching in schools. (There are many books for children describing life in other countries, and a list of these will be given in the Bibliography. A good book to help the teacher in preparing a geography course for little children is Tarbuck's *Newmann's Sand Modelling*.)

The children's attention should be directed to the winds, and also to the position of the sun, moon, and stars in the sky. They will notice that they never see the new moon except in the west, nor the full moon except in the east, and that the sun rises in the east and sets in the west, &c. It is not necessary to give young children any explanation about these things, merely to let them observe the phenomena.

As much as possible geography should be an out-of-door lesson for little ones. The models of mountain groups, and of different shore-lines, such as the cliff shore and the low shelving shore given in the sand-

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modelling book, might be constructed in the garden, or by the sea-shore on a fairly large scale. This might be done also in the case of a watershed and river.

If the parents' holiday in Norway or Switzerland should result in helping the children to construct the mountains and fiords, or a Swiss lake with its mountain peaks and glacier in the "Geography Corner" in the garden, this would be delightful. Animals from the Noah's Ark can be picketed on the mountains after the manner of mountain herds, and the charming little models of Swiss houses placed by the lake. Stories can then be told of the courage and endurance of the Swiss peasants, and of their love for their own country.

Another occupation is to construct a large relief map of England on the ground in the "Geography Corner." The children first mark the position of any places they have visited. Afterwards they may add mountains, rivers, lakes, &c. The coal districts are marked by the children sinking little bits of coal into the model and scattering coal-dust on the top. Corn is planted in the arable districts and grass laid in the pasture lands, and here small models of cows and sheep are placed. Little fleets of fishing-boats are arranged near the fishing-ports. In connection with the model, descriptions should be given to the children of coal-mines, the life of a miner, of factory districts and agricultural life, and of the fishing industry. Afterwards the chief railway lines may be laid.

The teacher will find the method used in schools well treated in the Herbertson Geographies.

Nature Study.—Here our work is to direct children to observe, love, and appreciate nature. The child of three or four should have a plant or a pet to take care of. Nature work with children of this age in the Kindergarten chiefly consists in the care of plants growing in the room or in the garden, in feeding and looking after a pet, in stories about birds, beasts, and flowers, &c.

We should have "Nature Talks" with the children, and lead them to observe for themselves the difference between the shapes of leaves and of flowers and their colours ; and afterwards they may make brushwork studies of them. Children of four have correctly produced with the brush the shape of a closed and open crocus. The opening of the leaf-buds in spring and the packing of the leaves inside the scales should be a study. The reason for the toughness of the texture of the brown scales and their overlapping is very soon discovered if a few questions on the subject are asked. The germination of seeds should be watched. Chestnuts and acorns can be kept in damp moss or in specimen glasses. The children should be told nothing beyond the fact that the seed they have been given to look after and to take care of, has within it a wonderful power, and they must be on the watch to see what will happen. The successive stages of growth of the chestnut should be drawn, and kept in one little book. Peas and beans

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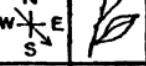
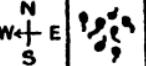
germinate very easily, and other seeds such as the Indian corn and pumpkin should be grown in conjunction with chestnuts and acorns.

The work which children from six to eight years old can do in regard to nature study is very varied, and they should be encouraged to do it for their own amusement.

They may keep a Nature Calendar. On this is indicated every day the weather, the direction of the wind, and any event such as finding the first primrose, seeing an almond tree in blossom, watching a bird, &c. This may be done before the child can read or write. The weather is shown with the brush. A fine day is blue, a cloudy day grey, a rainy day black with rain marks, &c. A little picture marks the event for the day. When the child can read and

write he may keep a Nature Diary, and illustrate it. In all study he should be led to observe, to think and to reason, and not told of facts which he may discover for himself.

Why are the bud scales so thick and sticky? How are the leaves arranged on this plant? Why are they arranged alternately so that no leaf shades

April 5 - 12			
Sun.			
Mon.			
Tue.			
Wed.			
Thu.			
Fri.			
Sat.			

another ? Why is the plant in the window growing crooked ? What happened to the seeds we grew in the cellar, and to those we grew in the window ?

Certain points should be brought out, such as : The defences of plants and animals ; the arrangement for obtaining light and air among plants ; societies of plants, those of the meadow, wood, bog, &c. The life histories of plants or of some insects and animals should be studied at first hand, *i.e.* a plant grown from seed, or a caterpillar, caddis-worm or frog-spawn, &c., kept and watched through all their stages.

A good general book for the teacher on botany and zoology is *Nature Study*, Ainsworth Davis (Dent) ; and another book, *Plant Life*, Atkinson (Ginn), suggests very interesting questions. The nature books written for children are many and comprehensive (see the Bibliography).

The child's love and appreciation of nature depends greatly on parents and teachers. If we care for the beautiful in nature, and are interested in natural objects, the child will care also. Sometimes a few lines of poetry bearing on the subject of the nature study may be written in the Nature Diary.

Gardening.—Wherever it is possible children should have a garden of their own ; their work in it is an important part of nature study, and should be encouraged in every possible way.

Literature.—In choosing the stories we tell to children and the books they read, it is not always

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necessary to be sure that they will understand them, but it is necessary that they should be beautiful, and that the language should be worthy of the subject. Any books written for children which present the old classic tales in a semi-jocose style are to be avoided. They tend to hinder the feeling of reverence which we desire to foster in the mind of the child towards all beautiful ideas and conceptions. A book arranged with great care for children, and excellent in style and simplicity of language, is *Tales from the Greek*, Romance Readers, Thomson (published by Horace Marshall & Son). Other books edited by the same publishers are equally to be recommended for refinement and taste. The literature lesson should be combined with other studies, such as nature study and history. In the first case it may be a poem, in the second, stories from Greek and Roman history might be supplemented by *Tales from the Greek*, or *Stories from the Latin Poets*. The history of the ancient Britons should include stories from the *Morte d'Arthur*; that of the Saxons, stories from Scandinavian and Norse mythology. There are now countless children's books containing the old legends of most countries, and these are stories most likely to give children a love of literature.

History.—The legends just mentioned will form part of the history lesson, as well as the accounts given in the geography books of people in other lands. Messrs. Jack's publications of various histories for children, *Our Island Story*, *Our Empire Story*, *The*

History of Discovery, *The Story of Rome*, &c., will provide the teacher with much material for telling again to the child. *The Nursery History of England* is a charming book, and so well illustrated that every event depicted must live in the child's imagination. As the title implies, it is a book that will put history into the grasp of very little people. The history lesson becomes very interesting as the teacher tries to draw out the children's own views of the character she has been describing, or as she leads them to see how one event hung upon another.

Dramatisation.—Children should dramatise the stories from literature and history in the manner suggested in the chapter on Play. This, besides being an exercise for the imagination, is a valuable opportunity for the development of personality. The children should be stimulated to arrange their own parts and method of acting them. It is also good practice in oral composition.

French.—This is a subject usually begun in the nursery. The children learn the names of objects, and simple sentences about their work and play. Great care should be taken with the accent. Two helpful French books are: *Little French Folks*, Onions (Horace Marshall. 1s. 6d.), *French without Tears*, Lady Bell (Edward Arnold).

CHAPTER VII

SCHEME OF LESSONS FOR A WEEK

IN this chapter it is proposed to describe a practical course of work which might be done with three children at home varying in age from three to four years. It is often the case that at home the inexperienced teacher finds difficulties in so arranging the work that several little children at different stages may all be suitably occupied at the same time. This is always a difficult matter, and much of course depends upon the teacher's tact, discipline, and sympathy with children. That can hardly be learnt from a book ; but suggestions for the time-table and a scheme of work covering a week will be a help towards it.

It is taken for granted that the teacher is prepared to give time, trouble, and effort to her work. This is the more necessary in the case of very young children. A good teacher of little children is conscious the whole time she is with them of a great demand on her energies ; all the powers of will, of heart, and mind are called upon. A year or two in the children's age makes a great difference in this respect. When the children are nearly seven years old, the teacher's powers of giving are not taxed in the same way. She gives less and receives far more.

It is hoped that the following plans for work will not discourage any teacher: and if any such scheme seems impossible, the fact that it contains suggestions for all lessons will probably make it useful in more than one branch of the children's work. The aim of the writer is to suggest a method of dealing with children's work rather than to lay down any unvarying methods which might tend to become stereotyped and mechanical.

It seems simplest, in the scope of one chapter, to give the work for one week rather fully, with suggestions for a month, and selecting one particular month in the year.

Let us then choose the month of June. Work is to be arranged for three children living in the country, Jack, four; David, five and a half; and Lucy, a little over seven years of age. The lessons are to include reading, writing, elementary mathematics, a story, nature study, and other occupations connected with these subjects. The preceding chapters will be freely referred to, and the principles laid down in them taken for granted. The hours for lessons will be 9.30-11.30, with some farther occupation in the afternoon; being the month of June, the work will be based on Nature Study.

Monday, 9.30-10.—A story from the *Water Babies* (Kingsley). The children have already heard the story up to the time when Tom is a happy little water-baby swimming about in the river. The story for this week will be the account of how he watched the caddis. To this little Jack will also be expected

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to listen, the teacher taking pains to use any illustrations that come within his experiences. The story is here sketched, not filled out as the teacher will do.

“Tom, you remember, had been taken by the fairies, washed from all his dirt, and turned into a water baby. He remembered none of his old troubles, being hungry, and tired, and beaten, or sent up dark chimneys, or having ever been dirty. He was very happy in the water. He had been so overworked in the land-world, and now he was to have holidays in the water-world for a very long time. He was to have nothing to do but to enjoy himself, and to look at all the wonderful pretty things in the water. What did he live on? Watercresses perhaps. But we know so little about what water things eat, and Tom was a water baby now. I expect he had a great many things to eat. Tom ran along the stones at the bottom of the stream, just as you run about the garden. He climbed over little ledges of rock and watched many little water-things running in and out among the stones. Sometimes he went into a still corner, and watched the caddis-worms eating dead sticks as greedily as you would eat plum-pudding, building their houses of silk and glue. The way they build their houses is very clever. There are plenty of caddis-worms in the stream on the common, and you shall go down there this afternoon, and we will catch some. This caddis that Tom was watching stuck a little piece of wood on, and then a pebble, and then a shell, and then another bit of wood, and last she found a long straw five times as

long as herself, and said, 'Hurrah! I'll have a tail, for my sister has one too,' and she stuck it on her back and marched about very proudly. And to stick a long straw on your back for a tail became the fashion amongst the caddises in that stream that summer, and ever so many of them did it, and Tom watched them. One day Tom found a caddis and wanted it to peep out of its house, but its house door was shut. What do you think Tom did? It was very bad and meddlesome of him, but he pulled the door open to see what the caddis was doing inside. What a shame! We should not like anyone to pull our bedroom door open and see where we were in bed. The fairies were very sorry when they saw Tom do that, but they did not say anything to him, because the queen of the fairies had forbidden it; and afterwards Tom learnt better. Tom broke the door to pieces. It was made of the prettiest little grating of silk, stuck all over with shining bits of crystal, and when he looked in the caddis poked out her head. It had turned into the shape of a bird's. When Tom spoke to her she could not answer, for her mouth and face were tied up tight in a new piece of neat pink skin. However, if she did not answer all the other caddises did, for they held up their hands and shrieked like all the cats in *Struwwelpeter*. 'Oh, you nasty, horrid boy; there you are at it again! And she had just laid herself up for a fortnight's sleep, and then she would have come out with such beautiful wings, and flown about and laid such a lot of eggs: and now you have broken her door, and she can't mend it

because her mouth is tied up for a fortnight, and she will die. Who sent you here to worry us out of our lives ! ' Tom swam away. He was very much ashamed of himself. He felt lonely and sulky. ' He had not learnt to be kind to the animals and to help them. When we get some caddises from the stream, if any of them have shut their house doors we will not pull them open, but we will watch and see what happens. When we have seen what happens, I will tell you if Tom ever saw it too."

Question the children shortly on the *facts* of the story, and make them re-tell parts of it in their own words. Let them discuss any points of the story. Show a picture from the *Water Babies*: e.g. Tom sitting on a stone in the stream, with the copsewood in the background.

10-11.—This hour is devoted to reading, writing, and number work. Each child will not get an equal share of this work every day, but during the week it should be so arranged that each one receives sufficient attention.

At 10 o'clock little Jack might be given a tablet and stick-laying occupation at a little table or stool some distance from the other two children. He should have paper and chalks, so that he may try to draw pictures of the patterns he makes. (See Chapter II.) Promise that if his pattern is a pretty one, it shall be pinned up on the wall of the schoolroom for that day.

David and Lucy should then have a reading lesson together. This lesson is one of a course of reading lessons on the *Water Babies*, and is given on the Look

and Say and Phonetic Method combined. A black-board is necessary; and one may easily be made, of light planks, three feet long, joined together and covered with blackboard cloth. The cloth should be stretched tightly across the planks and fastened down on the wrong side with large drawing-pins. If there is no easel, stand the board on a little table against the wall.

For to-day's lesson the teacher writes on the board, "The caddises were eating dead sticks, and playing with straws." She reads this to the children, pointing to the words. The children read it after her once or twice, and then read it alone; they are told the words they do not know. We will suppose that Lucy masters the sentence very quickly, and when asked is able to read any word to which the teacher points. She may then have her writing book and copy the sentence into it. If she has time she may write it more than once. The teacher then gets David to say all the sounds in the word *stick*. He already knows many sounds and their signs, and quickly gives these in their right order, and draws any one of the signs asked for in the air with his finger, or points to *i* or *ck* on the board. (See Chapter III.) The teacher writes *ick* very clearly on the board, and gets David to build up a list of like-sounding words. When a short list, e.g., *tick* has been made, David is left to copy it *pick* tidily into his writing-book. The teacher *lick* then has time to look at Lucy's writing, *stick* and to give her work any explanation necessary,

for the work in arithmetic, which she is to do by herself that day.

When the reading lessons are based on a continuous story told to the children, the teacher should make the reading books herself ; this is quite easy, when there are few children, and will not take up too much time. The sentence taught that day is written or printed very clearly and boldly into blank books. In David's book the letters might be printed not written, and the list of words of which he has learnt the sounds printed after the sentence. In Lucy's book the teacher may add half a page of writing to this model sentence, because Lucy will have reading lessons to herself, and make quicker progress. Blank leaves may be left in the book on which the children may paste their illustrations of the story. They may also paint pretty paper covers for their books.

The arithmetic lesson is from 10.30-11. Lucy's work to be done alone that day ; the exercises set her are :

(1) Draw a table-cloth measuring six chequers long and four chequers wide, and find out the price if each chequer cost 3d.

(2) Draw another table, cloth 10×4 chequers, and find out the price if each chequer cost 6d.

(3) Draw a picture of your four times table, and write out the table.

It is supposed, as Lucy is to work by herself, that this is not new work, only that the particular problems are new, and that from what she has learnt

she will be able to solve them. For problems 1 and 2, when the numbers of chequers have been ascertained from the drawings: *e.g.*, 24 and 40, she may if she likes take 24 beans from her bag and separate them into little groups of three in each group; the number of groups will then represent the number of threepences, and if four of these groups are placed in one large group, the number of large groups, *e.g.* six, will represent the number of shillings. The child will have done work of this sort before, and will also be familiar with real threepences and shillings, and may be left to work out some little problems, very much like those she has done with her teacher, now independently. No. 2 is worked in the same way, and No. 3 involves drawing a shape, 8 chequers wide, and 6 chequers long, cutting it down the middle, and filling in the numbers as in the example of the five times table in Chapter IV, and then writing out the table. Here it is supposed that the four times table has previously been built up with cubes, and that the two times and three times table have been drawn and written out. The teacher must read what she has written down for Lucy's homework to the child, and see that she clearly understands what she is expected to do.

While Lucy is left to this work David has a number lesson, and to this Jack may attend and pick up what he can.

The aim of this lesson is to show the relative magnitude of 1 to 2. The making of squares with 1-inch sticks and of oblong rectangles with sides of

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2 and 3 inches has been done by the children in previous lessons ; they are also familiar with the words *square, inch, oblong, rectangle, unit*.

To begin the lesson, give each child several Kindergarten sticks of different lengths.

Ask them to pick out the 1-inch measure, and the 2-inch measure.

Then ask for the measure which will be as long as the 2-inch and 1-inch measure together : *e.g.*, 3-inch measure. Then the measure twice as long as the 2-inch measure. Let the children arrange the four measures in order, and name them, 1, 2, 3, 4.

Ask how much longer is the 2-inch measure than the 1-inch measure ?

The 2-inch measure is as long as how many ones ?

What part of 2-inch is the 1-inch measure ?

How many halves make one whole thing like the 2-inch measure ?

Show me the 4-inch measure. Show its half.

If I call the 2-inch measure a half, what measure must I call a whole ?

If I call the 1-inch measure a half, what measure must I call a whole ?

Show me the 2-inch and the 4-inch measures again. If I take the 2-inch measure and call it the unit 1, show me the stick I must call the unit 2.

Draw a line on the board. Now call that line the unit 1, and draw the line you would call the unit 2.

Draw another line. Call it 1. Now draw the line that would be half that.

The teacher now shows the children four rectangles

of cardboard measuring 1 inch \times 1 inch, 1 inch \times 2 inches, 1 inch \times 3 inches, 1 inch \times 4 inches.

Here are 4 units. Show me the smallest unit. The largest.

Measure the smallest with your inch measure. What does it measure ?



What does the largest measure ?

We will call these units A, B, C, D.

Show me A. Show me B. Show me C. Show me D.

B is as large as how many A's ?

C is as large as how many A's ?

D is as large as how many A's ?

Show me half of B.

How many A's in C ? In D ?

D equals how many B's ?

If we call B 1, what ought we to call D ?

If B cost a 1d., what would D cost ?

If B cost 1s., what would D cost ?

Give the children chequered paper of $\frac{1}{2}$ -inch or 1-inch chequers, and coloured chalks.

Colour two chequers side by side.

Now colour a rectangle twice as large as that one.

11-11.30.—The children now do handwork together.

This morning the work is to make little dredging-nets for use when they are going to the stream. Jack may either try to do the same as the others, or may amuse himself with the same materials, or be allowed to practise cutting paper or stuff with scissors. Give each child a long willow-wand that has been soaking in water for several hours.

Bend the thin end of the wand round into a circle,

and show the children how to bind it securely over and over with bast.

Where the wand meets it may first be shaved a little flat, as it will then fit more closely, and the binding be more secure.

Then show the children how to attach a piece of dark blue or green muslin roughly circular in shape to the willow circle, turning the edge of the material over the willow, and running and pleating it with big stitches.

This work may probably not be finished by 11.30, and if so it may be left till the next day, as the children will not use them that afternoon. •

At 11.30 morning lessons are over, and the children will have their milk and biscuits if this is the custom. This is not the end, however, of the morning time-table, but as it is summer-time the rest of the morning until nearly 12.30 should be spent out of doors, followed by a regular rest-time until the children's dinner-hour. This rest should be on their beds, in a darkened room, without talk or reading aloud.

The afternoon walk to the stream is undertaken as a **Nature-Study Lesson**. On the way the children may discuss the preparation of a simple fresh-water aquarium in which to keep and observe caddises. It is proposed that during the summer the children should carefully observe caddis, water-snails, and perhaps the life history of the dragon-fly. Other water animals may be taken from the stream, studied for a few hours, and returned to it. For the caddis and water-snails, two fairly large deep glass basins

may be used, and for the larva of the dragon-fly an earthen basin will do, if it is not glazed white inside. The immediate object of this afternoon walk is to prepare one basin for the caddis. The children carry a tin box in which to pack water-weeds, and tin pails for gravel and stones. On arriving at the stream they may study the various water-weeds floating on the surface, and generally enjoy looking at everything. Where the stream runs shallow, stones and gravel may be obtained, and plenty of water-weed packed in the tin box. On reaching home the gravel must be well washed and stirred about in running water or under a tap, till the water flows off quite clean, and the bottom of the basin should be covered about 2 inches with the gravel. The water-weeds are planted in this; bunches of weeds may be attached with cotton to the stones, and the stones sunk in the gravel. A piece of dark blue or green muslin should be tied over the top of the basin, and if it stands in a sunny window, that side must be protected from the sun. (Helpful books for teacher and children are: *Look-About-You Nature Study Books*, No. 4 (Jack), *The Stream I Know* (Dent), *Introduction to Zoology*, Lullam (Macmillan), *Fresh Water Aquaria* (Upcott Gill).)

Lessons on Tuesday. 9.30-10. Reading.—Lucy should read a page which has been written out for her in her reading book. For a short time at the end of the lesson she may pick out all the words that she can spell by sound and write a list of them. Write on the board for David the words *stick, lick, &c.*,

which he had yesterday, and let him form these words with his letters on the table. The children have made these letters for themselves, as they learnt them, drawing them on thin cardboard and cutting them out.

A fascinating occupation may be arranged for Jack, at the further end of the room, by giving him a zinc washtray with about four inches of water in it, some large stones, floating toy animals, and a floating baby doll to represent "Tom."

10-10.30.—David and Lucy may make a free drawing to illustrate Tom in the stream and colour it, afterwards pasting it into their reading books. David should read yesterday's sentence which has now been printed for him in his book.

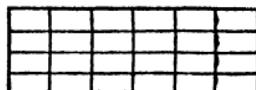
During this half-hour little Jack may be taken alone by the teacher. He may practise finding out the sounds in words, may try and tell her about Tom, and may have a counting lesson with beans or cubes.

10.30-11. Number Lesson.—David should draw the staircase up to 10 from the Tillich blocks and colour it, he may also make coloured pictures of the figures 5 and 6, combining them in every way he can. Afterwards let him play with the Tillich blocks on the floor. Give Jack plenty of building blocks and cubes on the floor also for his amusement.

Lucy's Lesson.—(This is a lesson preparatory to teaching short division; it presupposes that Lucy has done addition and subtraction up to 100, and can add and change tens.)

1. Arrange cubes in 6 rows of 4, as in yesterday's chequered drawing.

Ask how many cubes on the long side ?



How many on the short ?

How many chequers are there altogether ? 24.

How many rows of 4 in 24 ?

How many rows of 6 in 24 ?

How many groups of 4 in 24 ?

How many groups of 6 in 24 ?

How many *times* could you make a group of 4 out of 24 ?

How many *times* a group of 6 out of 24 ?

If we wish to see how many sets of 4 there are in any number and could not see it as easily as we see this, we must subtract 4 at a time from the number. Take 4 cubes from the first row of 4, that leaves 20 cubes, now another row of 4, 16 are left, continue till none are left. Arrange the 24 cubes in 2 rows of 10 and 4 over.

Now if we did not know how many times 4 could be subtracted from 24, and our number was arranged so, we

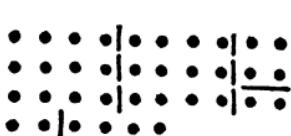
might subtract fours from the tens.

Subtract 4 twice over from the first ten. What does that leave ? Yes, 2. There is a remainder of 2 from this 10. We will leave it and take 4 twice from the other 10. There is a remainder of 2 from this 10 also. How many sets of 4 have we taken from the 2 tens. Yes, 4 sets. What number of

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cubes have we remaining from the 2 tens. Yes, 4 cubes. That will make one more set of 4 cubes, and this last set of 4 cubes another. How many times have we now subtracted 4 from 24 ? Yes, 6 times.

2. Arrange 36 beans in rows, or make dots on

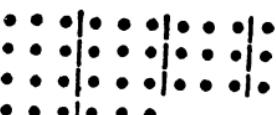


paper. Subtract fours again, separating the subtracted numbers with little sticks or lines.

From the 3 tens 6 sets of 4 are subtracted. A remainder of two for each ten makes up 6. From this subtract 4. This leaves a remainder of 2 to be added to the 6 other dots, and from these 4 is subtracted twice. Four has now been subtracted 9 times from 36.

3. Arrange 36 dots again. This time we will find how many threes are in 36. Subtract threes from the tens. This is done 9 times,

leaving a remainder of 1 for each 10 which make the tenth three to be subtracted. The odd



6 dots make 2 more threes. In

all, 3 is subtracted 12 times from 36. Would it not take a very long time if, whenever we wished to know how many threes or fours there were in any number, we had to go on subtracting 3 or 4 until we had subtracted all the threes and fours we could from the number ? Yes, it would. Another day I will show you a short way of doing this which we call division.

11-11.30. Yesterday's handwork: *i.e.*, the nets, can be finished during this half-hour.

In the afternoon the children may go again to the stream with their nets, and may amuse themselves by putting the contents of the nets into jam-pots and watching any little things they have caught. Afterwards the jars should be gently emptied into the stream, keeping only the caddises, which may be packed in a tin with wet weed and brought home for the aquarium. The caddises need plenty of water-weed to feed on; sometimes they may have a little raw meat: any decaying matter in the aquarium should be removed at once. When the caddis enters the pupal stage, it must be given a way of exit from the water by means of a stick.

Wednesday's Lessons.—Give David and Lucy a reading lesson together, writing the following sentence on the board: "At last one day he found a caddis and wanted it to peep out of its house; but the house door was shut. He had never seen a caddis with a house door before, and he pulled it open." After the sentence has been read, teach the sound *ee*; underline *peep* and *seen*, and make a further list, *seed*, *deed*, &c. Underline *door*, and teach the sound *oor*, and make a list, *poor*, *door*, *floor*.

The children may be left to print the sounds *ee* and *oor* on cards and cut them out, putting them, when done, in the box of letters.

While they do this, Jack should do counting and sounding.

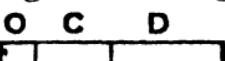
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10.10-10.30.—Lucy and David write a short copy, e.g., "I peeped in at the door." Jack may draw with coloured chalks on a small blackboard.

10.30-11. The Number Lesson.—Lucy may be given such numbers as 28, 39, 42, 48, 56, to draw or build and divide by the method of subtraction by 4 or 3, writing the results.

Jack and David may continue Monday's lesson.

The aim of this lesson is the relative magnitude of 1, 2, 3.

1. Show children cardboard rectangles measuring 2×2 , 2×4 , 2×6 in. Name them. 

Show me O. Show me C. Show me D

If I call O a half, what is C? What is D?

2. Place O and C together and make one rectangle of the two. How long is the rectangle you have made? How wide is it? It is as large as what rectangle? It equals what rectangle?

3. Place the three rectangles together, making one rectangle. How long is the rectangle? Into how many D's could we cut this rectangle? Into how many C's? Show me a half of the rectangle. D is what part of the rectangle? If you put two rectangles together, the new rectangle is called the sum. The sum of O and C is what part of the rectangle?

4. If O is 1, what is C? And what D? Show me the unit 2. The unit 3. The unit 1. How much greater is the unit 3 than the unit 1? The unit 3 is 2 greater than the unit 1. How much less is the unit 2 than the unit 3? Two and what equals 3? One and what equals 3? Show me which 2 rectangles

will equal the rectangle 3. Show me the 2 equal rectangles. The sum of 1 and 2 is 1 2 3 what part of the large rectangle we made ? The large rectangle equals how many threes ? How many twos ?

5. If 2 were a wall which took a man a day to build, how long would he take to build 1 and 3 ?

If 2 were the distance from the front door to the cedar tree, and it took you 2 minutes to run it, how long would it take you to run half that distance ? And how long to run the distance from the door to the cedar tree and half the distance again ? [The length of this lesson is of course left to the teacher's discretion. All the work shown here need not be given at one time, and it may be varied by cutting out figures of the same relative sizes.]

11-11.30. Brushwork Lesson.—All three children may do this. The work to be done is to paint water-weeds on a pale blue ground.

Damp the paper slightly with a sponge, and then cover it with a pale blue wash. Show the children how to move the brush evenly from left to right. When the paper is dry, paint some of the water-weeds in green colour.

The water-weeds themselves may be floating in a glass dish of water.

In the afternoon the children might prepare the aquarium for the water-snails. These will need plenty of common weed. The earthenware basin for the dragon-fly larva may also be prepared. This will need plenty of vegetation ; the weeds should float

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well above the water. The dragon-fly larva will need means of exit from the water, or it will injure its wings. For this purpose several rough sticks weighted at one end might be placed in the water so that they project several inches above it.

Thursday's Lessons. 9.30-10.—The first half-hour on Thursday morning might be spent by all the children in comparing and then drawing the various water-weeds, and in telling what they have observed for themselves of the caddis.

10-10.20.—Lucy should have her reading lesson to herself while Jack and David are provided with material for chalk drawing and clay modelling.

10.20-10.40.—While David has his reading lesson to-day Lucy may be allowed to occupy Jack. If left to herself, she will probably teach him something very well.

10.40-11.—Lucy should then have an arithmetic lesson, and during her lesson Jack and David may model a water baby and some other floating toys from those which have been given them.

Lucy's Lesson.—1. To-day we will learn the short way of finding how many times we can subtract a

number from another number,
i.e. division.

• • • | • • • | • • • | • 2. Subtract threes from 36
• • • | • • • | • • • | • again. How many threes do
we get ? 12. How many threes in the three tens ?
Ten threes.

There are how many *times* 3 in 30 ? Ten times.
Yes, there are ten times three in 30.

SCHEME OF LESSONS

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Into how many threes have we divided 30 ?

Into ten threes.

$3 \overline{) 30}$

3. We write this division sum so :

$\underline{10}$

What does the 10 mean ?

Now I will write the other sum :

$3 \overline{) 36}$

Into how many threes can we divide 36 ?

$\underline{}$

What does the three here in this written number 36 mean ? Yes, three tens. In 3 tens how many threes ?

We may say threes into thirty go ten times . $3 \overline{) 36}$
and write it so :

$\underline{10}$

But then we have to say how many threes in 6 ?
Two threes. Where shall I write the 2 ? Yes, in
the place of the nought. Now it is written : $3 \overline{) 36}$

4. It is easy by such examples as :

$$\begin{array}{r} 3 \overline{) 300} \\ \underline{100} \end{array} \quad \begin{array}{r} 3 \overline{) 330} \\ \underline{110} \end{array} \quad \begin{array}{r} 3 \overline{) 360} \\ \underline{120} \end{array} \quad \begin{array}{r} 3 \overline{) 339} \\ \underline{113} \end{array}$$

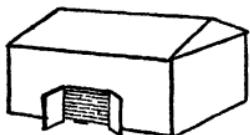
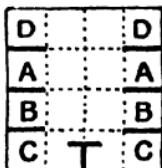
to show that threes into the first 3 means how many
threes in 300, into the second three how many threes
in 30 or 60.

5. The examples worked with dots yesterday
might now be worked on paper.

11-11.30.—During this half-hour Lucy might write
some original sentences on the story of Tom, being
allowed to ask how to spell any words she does not
know. Some count might be kept of the words
told her, that she may afterwards learn them and
write them from dictation.

Jack and David might have a constructive hand-
work lesson involving measuring and cutting paper,
i.e. to cut a piece of paper measuring 8" x 8" from a
larger piece, afterwards folding the square piece into

the shed in which Tom slept. The inches may be marked off with an inch cube, the ruling being done by the children.



Fold for creases. Cut along thick lines. Pin A over B for pointed roof, and fasten C as far over D as necessary for sides of barn. Fold open the doors.

The afternoon might be employed in gardening or some other nature lesson.

Friday's Lessons.—The reading lesson to-day for Lucy and David might be: "Should you like to have your bedroom door broken in? The door was a pretty little grating of silk, stuck all over with shining bits. The caddis poked her head out, her mouth and face were tied up in pink skin." *Stuck, Pink, and Skin* might head the list for sounding and building words, and like words written under these.

It is suggested that the number lesson should be omitted to-day, and an extra half-hour given to building and writing words from dictation. Every simple word for sounding in this sentence might be underlined: e.g., *bed, door, in, silk, bit, up*. The children find them, and write from dictation other words that are like them. While this lesson went on it would be easy for the teacher to let Jack sit beside her, giving him some handwork occupation.

No time has been arranged for music lessons in this week's scheme. It is supposed that these would be

given in the afternoon or before 9.30. Learning and singing songs might also sometimes be an occupation later in the day. Drill has also been left out, because the time chosen is during the summer months, and play in the garden takes its place. During the next month it is suggested that stories from the *Water Babies* are continued every week. Later in the summer, if the children go to the sea, the stories of Tom's experiences when he goes down to the sea would fit in very well with a course of nature lessons on sea-creatures. The nature lessons for the rest of this month should include continued observation of the creatures in the stream, and the vegetation in and on the banks of the stream. The larva of the dragon-fly is best caught by dredging for it in a pond. If the larva is full grown it will need no food, but if not, it cannot be kept alive except on other larvae or tadpoles. But it is better this feeding should be done when the children will not observe it. The larva will also feed on a little raw meat, but it cannot live only on this. The geography of a stream or river should also form part of the children's study. Lucy may be sufficiently advanced to learn by heart the beautiful little poem on the river in the *Water Babies*. All that is necessary for the child to gain from the poem is poetic sympathy with the life course of the stream.

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